**Dermabrasion, Chemical Peels, and Acne Surgery**

**Number: 0251**

**Policy**

*Please see amendment for Pennsylvania Medicaid at the end of this CPB.*

**Dermabrasion** (see also CPB 0031 - Cosmetic Surgery (../1_99/0031.html))

Aetna considers dermabrasion using the conventional method of controlled surgical scraping (dermaplaning) or carbon dioxide (CO₂) laser for removal of superficial basal cell carcinomas and pre-cancerous actinic keratoses medically necessary when both of the following criteria are met:

1. Conventional methods of removal such as cryotherapy, curettage, and excision, are impractical due to the number and distribution of the lesions; and

2. The member has failed a trial of 5-fluorouracil (5-FU) (Efudex) or imiquimod (Aldara), unless contraindicated.

Aetna considers dermabrasion for scar revision cosmetic.

**Note:** Exceptions to the cosmetic surgery exclusion may apply to revision of scars. Please check benefit plan descriptions.
Aetna considers dermabrasion for removal of acne scars cosmetic. Dermabrasion and microdermabrasion are considered experimental and investigational in treating active acne because it has been shown to increase inflammation associated with active acne.

Other than the indications above, Aetna considers dermabrasion and microdermabrasion experimental and investigational because its effectiveness for other indications has not been established. For example, Aetna considers dermabrasion and microdermabrasion experimental and investigational for the treatment of diffuse silicone granuloma, dyschromias, keloids, melasma, and vitiligo.

Chemical Peel (see also CPB 0031 - Cosmetic Surgery (../1_99/0031.html))

Aetna considers medium and deep chemical peels for actinic keratoses and other premalignant skin lesions medically necessary when members have 15 or more lesions, such that it becomes impractical to treat each lesion individually, and they have failed to adequately respond to treatment with topical 5-FU or imiquimod, unless contraindicated.

Aetna considers chemical peels not medically necessary for the treatment of nonmalignant (simple) lesions.

Aetna considers chemical peels for active acne experimental and investigational because they have not been shown to be effective for that indication.

Aetna considers chemical peels for acne scarring, melasma, skin wrinkling or lentigines cosmetic.

Aetna considers chemical peels experimental and investigational for all other indications because their effectiveness for indications other than the ones listed above has not been established.

Acne Surgery

Aetna considers acne surgery such as marsupialization, opening or removal of multiple milia, comedones, cysts, pustules medically necessary for the treatment of acne vulgaris.
Aetna considers cryoslush therapy (solid CO\textsubscript{2} mixed with acetone) and liquid nitrogen therapy experimental and investigational for acne because their effectiveness for this indication has not been established.

Aetna considers intralesional injection of steroid medically necessary for the treatment of inflammatory nodulo-cystic acne. Intralesional steroid injection is considered experimental and investigational for other types of acne (e.g., acne conglobate, acne fulminans, and pyoderma faciale; not an all-inclusive list).

Aetna considers scar injection or any other treatment to smooth or reduce visible acne scarring as cosmetic.

Aetna considers surgical treatment, including incision and/or drainage, (Stage I and Stage II), punch debridement, unroofing and/or excision (Stage II and Stage III) medically necessary for acne inversa (hidradenitis suppurativa).

Aetna considers fractional radiofrequency (including fractional micro-plasma radiofrequency) for the treatment of acne scars experimental and investigational because its effectiveness for this indication has not been established.

Aetna considers micro-needling for acne scars and other dermatological indications experimental and investigational because its effectiveness for these indications has not been established.

Background

Dermabrasion

Dermabrasion is a dermatologic procedure that exerts its therapeutic effect by removing the epidermis and superficial dermis, allowing re-epithelialization from the underlying skin to occur. With dermabrasion, a specialized hand held instrument is used to "sand" the skin, removing the epidermal surface in order to improve contour. Therefore, the technique is best used for superficial lesions of the face (Fitzpatrick et al, 1993).
Standard dermabrasion uses a wire brush or diamond fraise (a stainless steel wheel on which diamond chips have been bonded) abraders to plane the skin whereas laser dermabrasion involves use of the argon laser, ultrapulse carbon dioxide (CO\textsubscript{2}) laser, or flashlamp-pumped pulsed dye laser to resurface the entire face, and has been used as an alternative to standard dermabrasion in treating patients with inactive acne with disfiguring scarring (Wheeland, 1995; Alster and McMeckin, 1996; Alster and West, 1996; Ruback and Schoenrock, 1997; Aronsson et al, 1997; Fulton, 1996). Manufacturers of lasers cleared by the Food and Drug Administration for general skin resurfacing include Laser Industries, Coherent, Tissue Technologies, and Heraeus Surgical.

Dermabrasion is contraindicated in patients with active acne, as it may exacerbate skin inflammation (AAD, 1994; Arnold et al, 1990). Acne is active when inflammation is present, and is treated with oral and topical antibiotics and retinoids (e.g., isotretinoin (Accutane) or retinoic acid (Retin-A). Dermabrasion conducted within 6 months of isotretinoin treatment has been associated with increased scarring (Fitzpatrick et al, 1993; AAD, 1994). Coverage is not provided for dermabrasion for inactive acne (such as in removal of scars from chronic cystic acne) as dermabrasion is considered a cosmetic procedure for this indication.

Because of a lack of evidence of safety and effectiveness, dermabrasion of active acne is considered investigational. Dermabrasion for post-acne scarring is considered a cosmetic procedure.

With microdermabrasion, abrasive crystals are used to remove the dead epidermal cells from the face.

In an evidence-based review on microdermabrasion, Karimipour and colleagues (2009) stated that the role of microdermabrasion in the treatment of dyschromias and acne vulgaris is limited.

In an observational study, Garg and colleagues (2011) evaluated the usefulness of a less-painful method of repigmentation of vitiligo patches. A total of 40 vitiligo patches in 22 consecutive patients with resistant vitiligo were treated with microdermabrasion followed by topical 5 % 5-FU. One-third of the patches showed more than 50 % re-pigmentation, and 1/4 showed more than 75 % re-pigmentation. Gratifying results were obtained in 7 patches after 1 session. The authors
concluded that microdermabrasion is adjunctive with topical 5 % 5-FU in the treatment of resistant vitiligo patches. They stated that further well-controlled randomized trials are needed to validate the observations of the study.

Patel et al (2014) stated that atrophic scars cause significant patient morbidity. While there is evidence to guide treatment, there does not appear to be a systematic review to analyze the effectiveness of treatment options. These researchers retrieved all evidence relating to atrophic scar treatment and evaluated using the Clinical Evidence GRADE score in order to allow clinicians to make evidence-based treatment choices. Searches were performed in Medline, EMBASE, CINHL and Cochrane to identify all English studies published evaluating treatment of atrophic scars on adults excluding journal letters. Each study was allocated a GRADE score based on type of study, quality, dose-response, consistency of results and significance of results. The end score allowed categorization of evidence into high, moderate, low or very low quality. A total of 41 studies were retrieved from searches including randomized controlled trials (RCTs), observational studies, retrospective analyses and case reports of which 7 % were allocated a high-quality score, 10 % a moderate score, 7 % a low score and 75 % a very low score. Treatment modalities included ablative laser therapy, non-ablative laser therapy, autologous fat transfer, dermabrasion, chemical peels, injectables, subcision, tretinoin iontophoresis and combination therapy. The authors concluded that there is a paucity of good-quality clinical evidence evaluating treatment modalities for atrophic scarring. Evidence supports efficacy of laser, surgery and peel therapy. Moreover, they stated that further biomolecular research is needed to identify targeted treatment options and more RCTs would make the evidence base for atrophic scar treatment more robust.

Diffuse Silicone Granuloma

Zarei et al (2015) noted that formation of a foreign body granuloma is one of the serious complications of silicone injection, which can be difficult to treat. These investigators reported their successful experience with dermabrasion as an innovative treatment in a patient who presented with diffuse silicone granuloma. The patient was a 51-year old woman, with areas of induration and hyperpigmentation on both her legs with intermittent fevers and generalized malaise. The patient had a history of numerous bilateral hip injections of liquid silicone 5 years ago for cosmetic purposes. A skin biopsy showed a foreign-body granuloma consistent with a paraffinoma with "Swiss cheese" appearance. After unsuccessful
medical therapy and liposuction, an extensive bilateral dermabrasion was performed on both legs. Post-operatively, her wounds exuded a collection of thick, yellow viscous fluid under the transparent semi-occlusive dressings, which showed a markedly elevated level of silicone after analysis. She experienced no complication related to dermabrasion. The authors concluded that the findings of this case demonstrated that dermabrasion may be an effective treatment option for diffuse silicone granuloma, particularly when the material resides superficially in the dermis. These preliminary findings need to be validated by well-designed studies.

Chemical Peels

With chemical peels/chemical exfoliation, a chemical solution is applied to the skin, resulting in destruction of the superficial layer, allowing a new layer of skin regeneration.

Chemical peels can be classified according to the type of "wounding" agent used and targeted depth of exfoliation (i.e., superficial, medium, deep). Chemicals most often used in superficial peels are: 10 to 35 % trichloroacetic acid (TCA), resorcin, Jessner's solution, Retin-A, 5-FU, azelaic acid and alpha hydroxy acids (glycolic and lactic acid). For medium peels 50 % TCA is used or lower concentrations of TCA in combination with Jessner's solution, 5-FU or carbon dioxide cryotherapy. Baker's phenol or a 50 to 70 % solution of TCA are used for deep peels. There is a paucity of data in the literature which compares the effectiveness of the various chemicals used in chemical peels.

Chemical peeling is a long-standing and accepted dermatologic technique. However, clinical studies comparing the various types of chemical peels, and comparing chemical peels to other forms of therapy are unavailable. The main coverage issue regarding the technique is the determination of whether the chemical peel is primarily cosmetic in nature. Actinic keratoses are pre-malignant lesions and the medical necessity for their destruction/removal is not questioned. However, a chemical peel for the treatment of actinic keratoses would only be appropriate when there are numerous lesions, making treatment of the individual lesions impractical. For example, Morganroth and Leffell (1993) suggested that patients with less than 10 actinic keratoses should be treated with cryotherapy.
Additionally, curative treatment of actinic keratoses requires a full thickness necrosis of the epidermis. Brodland (1988) estimated that this depth of necrosis would be unlikely with concentrations of TCA less than 35 %. Therefore, coverage requests for superficial chemical peels as a treatment of actinic keratoses may actually represent primarily cosmetic procedures and should be carefully evaluated.

Superficial chemical peels with alpha-hydroxy acids, so called fruit acids which include glycolic acid and lactic acid, have been used for the treatment of acne. While low concentrations of glycolic acid can be administered by the patient at home, higher concentrations (50 to 70 %) are administered in the office.

Guidelines from the American Academy of Dermatology (AAD) observe that both glycolic acid-based and salicylic acid-based peeling preparations have been used in the treatment of acne (Strauss et al, 2007). The guidelines state: "There is very little evidence from clinical trials published in the peer-reviewed literature supporting the efficacy of peeling regimens. Further research on the use of peeling in the treatment of acne needs to be conducted in order to establish best practices for this modality."

Dreno and associates (2011) examined the evidence that supports the widespread use of superficial peels in the treatment of acne and acne-prone oily skin. A search of the English language medical literature was performed to identify clinical trials that formally evaluated the use of chemical peeling in active acne. Search of the literature revealed very few clinical trials of peels in acne (n = 13); a majority of these trials included small numbers of patients, were not controlled and were open label. The evidence that is available does support the use of chemical peels in acne as all trials had generally favorable results despite differences in assessments, treatment regimens and patient populations. Notably, no studies of chemical peels have used an acne medication as a comparator. As not every publication specified whether or not concomitant acne medications were allowed, it is hard to evaluate clearly how many of the studies evaluated the effect of peeling alone. This may be appropriate, however, given that few clinicians would use superficial chemical peels as the sole treatment for acne except in rare instances where a patient could not tolerate other treatment modalities. The authors concluded that in the future, further study is needed to determine the best use of chemical peels in this indication.
Cryotherapy utilizes liquids such as liquid nitrogen to reduce the skin temperature to very low levels causing the skin to peel, thereby removing whiteheads and/or blackheads.

Soleymani and associates (2018) noted that chemo-exfoliation, also known as chemical peeling, is a method of targeted cutaneous ablation using specific caustic agents that allow for rapid, predictable, and uniform thickness of chemo-ablation to a desired cutaneous depth, ultimately resulting in an improved appearance of skin. These investigators provided an up-to-date analysis of all currently available chemical peels for dermatologic use, as well as a step-by-step instructional protocol for an algorithmic approach to treatment. They carried out a comprehensive search of the Cochrane Library, MedlineE, and PubMed databases to identify relevant literature investigating chemical peeling agents. In addition, a search of all commercially available, prescription-based peeling agents was performed to identify all products currently available in the United States market. The authors concluded that chemical peels are the 3rd most commonly performed non-invasive cosmetic procedure in the U.S., with over 1,300,000 procedures performed in 2016 alone. There has been a paradigm shift in recent years, with lasers largely supplanting deep peels.

In a systematic review of RCTs, Chen and colleagues (2018) evaluated current evidence regarding the effectiveness of chemical peeling for treating acne vulgaris. Standard Cochrane methodological procedures were used. These investigators searched Medline, Cochrane Central Register of Controlled Trials and Embase via OvidSP through April 2017. Reviewers independently assessed eligibility, risk of bias and extracted data. A total of 12 RCTs (387 participants) were included. Effectiveness was not significantly different: TCA versus salicylic acid (SA) (percentage of total improvement: RR 0.89; 95 % CI: 0.73 to 1.10), glycolic acid (GA) versus amino fruit acid (the reduction of inflammatory lesions: mean difference (MD), 0.20; 95 % CI: -3.03 to 3.43), SA versus pyruvic acid (excellent or good improvement: RR 1.11; 95 % CI: 0.73 to 1.69), GA versus SA (good or fair improvement: RR 1.00; 95 % CI: 0.85 to 1.18), GA versus Jessner's solution (JS) (self-reported improvements: RR 1.00; 95 % CI: 0.44 to 2.26), and lipohydroxy acid versus SA (reduction of non-inflammatory lesions: 55.6 % versus 48.5 %, p = 0.878). Combined SA and mandelic acid peeling was superior to GA peeling (percentage of improvement in total acne score: 85.3 % versus 68.5 %, p < 0.001). GA peeling was superior to placebo (excellent or good improvement: RR 2.30; 95 % CI: 1.40 to 3.77). SA peeling may be superior to JS peeling for comedones.
(reduction of comedones: 53.4 % versus 26.3 %, p = 0.001); but less effective than phototherapy for pustules (number of pustules: MD -7.00; 95 % CI: -10.84 to -3.16). The authors concluded that commonly used chemical peels appeared to be similarly effective for mild-to-moderate acne vulgaris and well-tolerated. However, based on current limited evidence, a robust conclusion could not be drawn regarding any definitive superiority or equality among the currently used chemical peels. These researchers stated that well-designed RCTs are needed to identify optimal regimens. The main drawback of this study was that the methodological quality of the included RCTs was very low to moderate; meta-analysis was not possible due to the significant clinical heterogeneity across studies.

**Acne Surgery**

Surgical treatment of acne involves physical removal of the material forming the blockages and causing the lesions by various methods such as excision of cysts or pustules, incision and drainage, punch debridement or unroofing of nodules or sinuses.

The AAD found limited evidence published in peer-reviewed medical literature that addresses the efficacy of comedo removal for the treatment of acne, despite its long-standing clinical use (Strauss et al, 2007). The guidelines concluded, however, that "[i]t is ... the opinion of the work group that comedo removal may be helpful in the management of comedones resistant to other therapies. Also, while it cannot affect the clinical course of the disease, it can improve the patient’s appearance, which may positively impact compliance with the treatment program."

The guidelines make no mention of the use of liquid nitrogen or cryoslush in the treatment of acne (Strauss et al, 2007).

Levine and Rasmussen (1983) evaluated the effectiveness of intralesional injections of corticosteroids in the therapy for nodulo-cystic acne. Triamcinolone acetonide at a concentration of 0.63 mg/ml was as effective as a higher concentration of 2.5 mg/ml. Betamethasone phosphate had little, if any, effect on nodulo-cystic acne lesions at concentrations of 3.0, 1.5, and 0.75 mg/ml, when compared with saline controls. Mahajan and colleagues (2003) compared the effectiveness of intralesional triamcinolone with that of a combination of intralesional lincomycin and intralesional triamcinolone in nodulo-cystic acne. A total of 10 patients of nodulo-cystic were injected with intralesional triamcinolone
acetonide (2.5 mg/ml), while 9 patients were given lincomycin hydrochloride (75 mg/ml) in addition to the intralesional triamcinolone. They were followed-up 48 hours, 1 week and 1 month later. At 1 week, 7 patients (70 %) treated with injection triamcinolone showed 66 % improvement, whereas all 9 (100 %) patients treated with lincomycin and triamcinolone showed 100 % improvement that was stable at 1 month. The authors concluded that combination of intralesional triamcinolone and lincomycin is superior to intralesional triamcinolone alone in the treatment of nodulo-cystic lesions of acne.

The AAD’s “Guidelines of care for acne vulgaris management” (Strauss et al, 2007) noted that intralesional corticosteroid injections are effective in the treatment of individual acne nodules; there is limited evidence regarding the benefit of physical modalities including glycolic acid peels and salicylic acid peels. The guideline stated that “In the opinion of experts, the effect of intralesional injection with corticosteroids is a well-established and recognized treatment for large inflammatory lesions. It has been found that patients receiving intralesional steroids for the treatment of cystic acne improved. Systemic absorption of steroids may occur. Adrenal suppression was observed in one study. The injection of intralesional steroids may be associated with local atrophy. Lowering the concentration and/or volume of steroid utilized may minimize these complications”.

An UpToDate review on “Light-based, adjunctive, and other therapies for acne vulgaris” (Dover and Batra, 2013) states that “Intralesional glucocorticoids are a treatment option for nodular acne lesions that might otherwise take weeks to resolve. Treated lesions typically flatten in 48 to 72 hours, improving appearance and discomfort. Triamcinolone acetonide, in concentrations of 1.25 to 2.5 mg/ml, is typically injected using a 30 gauge needle. There is no high quality evidence demonstrating the efficacy of such injections, but extensive clinical experience supports their use. Lower concentrations of triamcinolone may be as effective as higher concentrations and may reduce the risk of adverse effects; in one small randomized trial, lesions treated with 0.63, 1.25, or 2.5 mg/ml of triamcinolone acetonide exhibited similar improvement scores. Patients should be cautioned regarding potential side effects including cutaneous atrophy, hypopigmentation, and telangiectasias”.

Scar injection involves the use of synthetic material or autologous fat injected under the skin to fill a scar or improve its appearance.
Acne Inversa (Hydradenitis Suppurativa)

Acne inversa (hidradenitis suppurativa) is a chronic follicular occlusive disease primarily affecting the axilla, waist, groin, perianal, perineal and inframammary areas.

Manifestations vary and may include recurrent inflamed nodules, abscesses, draining sinus tracts and bands of scar formation. Severity of the condition may be classified according to the following stages:

Stage I: Abscess formation (single or multiple) without sinus tracts and scarring.

Stage II: Recurrent abscesses with sinus tracts and scarring, single or multiple widely separated lesions.

Stage III: Diffuse or almost diffuse involvement or multiple interconnected sinus tracts and abscesses across the entire area.

The goals of acne inversa (hidradenitis suppurativa) treatment are to heal existing lesions, reduce the extent and progression of the disease and bring the disease activity to the mildest stage possible.

Fractional Radiofrequency (Including Fractional Micro-Plasma Radiofrequency) for the Treatment of Acne Scars

Simmons and colleagues (2014) noted that a more recent technique for the treatment of acne scars is non-ablative radiofrequency (RF) that works by passing a current through the dermis at a preset depth to produce small thermal wounds in the dermis which, in turn, stimulates dermal remodeling to produce new collagen and soften scar defects. This review article demonstrated that out of all RF modalities, micro-needle bipolar RF and fractional bipolar RF treatments offered the best results for acne scarring. An improvement of 25 % to 75 % can be expected after 3 to 4 therapeutic sessions using 1 to 2 passes per session. Results were optimal approximately 3 months after final treatment. Common adverse effects (AEs) can include transient pain, erythema, and scabbing. The authors concluded that further studies are needed to determine what RF treatment modalities work best for specific scar subtypes, so that further optimization of RF treatments for acne scars can be determined. They also stated that available studies using RF treatments on acne scarring did not address the long-term sustainability of
responses to treatment; although the results of this review were promising, more studies with longer follow-up are needed to determine the place of RF in the treatment of acne scarring.

Forbat and Al-Niaimi (2016) stated that fractional RF (FRF) is renowned for its use in cosmetic dermatology, with regard to the treatment of rhytides, striae, scarring and cellulite. These investigators analyzed evidence for the use of FRF in acne scars. Their search identified 15 articles, 1 single-blinded RCT, 2 split-face trials, and 13 prospective clinical studies, mostly single-centered; case reports were excluded. A total of 362 patients were treated. The longest follow-up was for 210 days, and the average follow-up was 3 months (range of 1 to 7). This review found that there were many small studies showing promising results for the use of FRF in acne scars, either as an adjunct or more importantly as the sole treatment. However, the authors concluded that there is a need for larger trials against ablative and non-ablative lasers, in order to affirm the evidence present already.

In a Cochrane review, Abdel Hay (2016) evaluated the effects of interventions for treating acne scars. These investigators searched the following databases up to November 2015: the Cochrane Skin Group Specialized Register, the Cochrane Central Register of Controlled Trials (CENTRAL) in the Cochrane Library (2015, Issue 10), Medline (from 1946), Embase (from 1974), and LILACS (from 1982). They also searched 5 trials registers, and checked the reference lists of included studies and relevant reviews for further references to RCTs. These researchers included RCTs, which allocated participants (whether split-face or parallel arms) to any active intervention (or a combination) for treating acne scars. They excluded studies dealing only or mostly with keloid scars. Three review authors independently extracted data from each of the studies included in this review and evaluated the risks of bias. They resolved disagreements by discussion and arbitration supported by a method expert as required. The primary outcomes were participant-reported scar improvement and any adverse effects (AEs) serious enough to cause participants to withdraw from the study. These investigators included 24 trials with 789 adult participants aged 18 years or older; 20 trials enrolled men and women, 3 trials enrolled only women and 1 trial enrolled only men. These researchers judged 8 studies to be at low risk of bias for both sequence generation and allocation concealment. With regard to blinding they judged 17 studies to be at high risk of performance bias, because the participants and dermatologists were not blinded to the treatments administered or received; however, they judged all 24 trials to be at a low risk of detection bias for outcome
assessment. They evaluated 14 comparisons of 7 interventions and 4 combinations of interventions; 9 studies provided no usable data on the outcomes and did not contribute further to this review’s results. For this review’s outcome “Participant-reported scar improvement” in 1 study fractional laser was more effective in producing scar improvement than non-fractional non-ablative laser at week 24 (risk ratio (RR) 4.00, 95 % confidence interval (CI): 1.25 to 12.84; n = 64; very low-quality evidence); fractional laser showed comparable scar improvement to FRF in 1 study at week 8 (RR 0.78, 95 % CI: 0.36 to 1.68; n = 40; very low-quality evidence) and was comparable to combined chemical peeling with skin needling in a different study at week 48 (RR 1.00, 95 % CI: 0.60 to 1.67; n = 26; very low-quality evidence). In a further study chemical peeling showed comparable scar improvement to combined chemical peeling with skin needling at week 32 (RR 1.24, 95 % CI: 0.87 to 1.75; n = 20; very low-quality evidence). Chemical peeling in 1 study showed comparable scar improvement to skin needling at week 4 (RR 1.13, 95 % CI: 0.69 to 1.83; n = 27; very low-quality evidence). In another study, injectable fillers provided better scar improvement compared to placebo at week 24 (RR 1.84, 95 % CI: 1.31 to 2.59; n = 147 moderate-quality evidence). For this review’s outcome “Serious AEs” in 1 study chemical peeling was not tolerable in 7/43 (16 %) participants (RR 5.45, 95 % CI: 0.33 to 90.14; n = 58; very low-quality evidence). For the secondary outcome “Participant-reported short-term adverse events”, all participants reported pain in the following studies: in 1 study comparing fractional laser to non-fractional non-ablative laser (RR 1.00, 95 % CI: 0.94 to 1.06; n = 64; very low-quality evidence); in another study comparing fractional laser to combined peeling plus needling (RR 1.00, 95 % CI: 0.86 to 1.16; n = 25; very low-quality evidence); in a study comparing chemical peeling plus needling to chemical peeling (RR 1.00, 95 % CI: 0.83 to 1.20; n = 20; very low-quality evidence); in a study comparing chemical peeling to skin needling (RR 1.00, 95 % CI: 0.87 to 1.15; n = 27; very low-quality evidence); and also in a study comparing injectable filler and placebo (RR 1.03, 95 % CI: 0.10 to 11.10; n = 147; low-quality evidence). For the outcome “Investigator-assessed short-term AEs”, fractional laser (6/32) was associated with a reduced risk of hyperpigmentation than non-fractional non-ablative laser (10/32) in 1 study (RR 0.60, 95 % CI: 0.25 to 1.45; n = 64; very low-quality evidence); chemical peeling was associated with increased risk of hyperpigmentation (6/12) compared to skin needling (0/15) in 1 study (RR 16.00, 95 % CI: 0.99 to 258.36; n = 27; low-quality evidence). There was no difference in the reported AEs with injectable filler (17/97) compared to placebo (13/50) (RR 0.67, 95 % CI: 0.36 to 1.27; n = 147; low-quality evidence). The authors concluded that there is a lack of high-quality evidence about the effects of different interventions for
treating acne scars because of poor methodology, under-powered studies, lack of standardized improvement assessments, and different baseline variables. There is moderate-quality evidence that injectable filler might be effective for treating atrophic acne scars; however, no studies have assessed long-term effects; the longest follow-up being 48 weeks in 1 study only. Other studies included active comparators, but in the absence of studies that establish effectiveness compared to placebo or sham interventions, it is possible that finding no evidence of difference between 2 active treatments could mean that neither approach works. They stated that the results of this review did not provide support for the 1st-line use of any intervention in the treatment of acne scars. Although the aim was to identify important gaps for further primary research, it might be that placebo and or sham trials are needed to establish whether any of the active treatments produce meaningful patient benefits over the long-term.

Lan and colleagues (2018) noted that acne scarring is a common disfiguring sequela of acne vulgaris that can lead to serious psychosocial problems and have a negative effect on patients’ quality of life (QOL). Although a variety of approaches can be used to treat atrophic acne scars, disadvantages such as long-healing time, dyspigmentation, infections, and prolonged erythema make these treatments unsatisfactory especially for Asians. Fractional micro-plasma RF is a novel technology that produces minor ablation to the epidermis to promote rapid re-epithelialization, while the RF-evoked thermal effect can stimulate regeneration and re-modeling of dermal fibroblasts. These researchers evaluated the safety and effectiveness of micro-plasma RF for the treatment of facial acne scars in Chinese patients. A total of 95 patients with facial atrophic acne scars were treated by micro-plasma radio-frequency using 3 sessions at 2-month intervals. Patients were examined 1 week after each treatment and 1, 3, 6 months after the final treatment. Improvement was evaluated by 3 independent dermatologists who compared photographs taken before the 1st treatment and 6 months after the last treatment; AEs were assessed by a dermatologist who did not participate in the study. Patients also provided self-evaluation of satisfaction levels at the last follow-up visit. A total of 86 patients with atrophic acne scars completed the entire study. There was a significant improvement in acne scars after 3 treatments. The mean score of ECCA grading scale (Echelle d’Evaluation Clinique des Cicatrices d’Acné) was reduced from 107.21 to 42.27 (p < 0.05); 15 of 86 patients showed more than 75 % improvement, 57 patients showed 50 to 75 % improvement, and 14 patients showed 25 to 50 %. After 3 treatments, all subjects showed improvements in spots, large pores, texture, ultra-violet (UV) damage, red areas, and porphyrin.
fluorescence. Pain, erythema, edema, effusion, and scab formation were observed in all patients. The average pain score on a visual analog scale (VAS) was 6.14±1.12, and all patients tolerated the treatments. The average duration of erythema was 6.26 ± 0.92 days. Hyper-pigmentation, hypo-pigmentation, infections, and worsening of scarring were not observed. All patients were either "very satisfied" or "satisfied" with the treatment outcomes. The authors concluded that fractional microplasma RF is a safe and effective treatment for acne scars, and might be a good choice for patients with darker skin. This was a relatively small study (n = 86 who completed the study) with only 6 months of follow-up. These preliminary findings need to be validated by well-designed studies.

Micro-Needling for Acne Scars and Other Dermatological Indications

Bonati and colleagues (2017) stated that micro-needling procedures are growing in popularity for a wide variety of skin conditions. These investigators reviewed the literature regarding the safety and efficacy of skin needling in all skin types and in multiple dermatologic conditions. They carried out a PubMed literature search in all languages without restriction and reviewed bibliographies of relevant articles. Search terms included: "microneedling"; "percutaneous collagen induction", "needling", "skin needling" and "dermaroller". Micro-needling is most commonly used for acne scars and cosmetic rejuvenation, however, treatment benefit has also been seen in varicella scars, burn scars, keloids, acne, alopecia, and periorbital melanosis, and has improved flap and graft survival, and enhanced transdermal delivery of topical products. Side effects were mild and self-limited, with few reports of post-inflammatory hyperpigmentation, and isolated reports of tram tracking, facial allergic granuloma, and systemic hypersensitivity.

DISCUSS: Microneedling represents a safe, cost-effective, and efficacious treatment option for a variety of dermatologic conditions in all skin types. More double-blinded, randomized, controlled trials are required to make more definitive conclusions.

Hou and associates (2017) performed a comprehensive review of micro-needling in human subjects and its applications in dermatology. These investigators performed a search using PubMed/Medline and Science Direct databases. Search terms included "microneedling"; "needling" and "percutaneous collagen induction". All available studies involving human subjects were included in the discussion, with priority given to prospective, randomized trials. Studies demonstrated micro-
needling’s safety and efficacy for the treatment of scars, acne, melasma, photodamage, skin rejuvenation, hyperhidrosis and alopecia and for facilitation of transdermal drug delivery. While permanent AEs are uncommon, transient erythema and post-inflammatory hyper-pigmentation are more commonly reported. The authors concluded that micro-needling appeared to be a safe and effective therapeutic option for numerous dermatologic conditions. Moreover, they stated that larger and more RCTs are needed to provide greater data on the use of micro-needling for different dermatologic conditions in different skin types.

Ramaut and co-workers (2018) stated that patients who suffer from scars or wrinkles have several therapeutic options to improve the appearance of their skin. The available treatment modalities that provide desirable results are often overtly invasive and entail a risk of undesirable AEs. Micro-needling has recently emerged as a non-ablative alternative for treating patients who are concerned with the aesthetic changes that result from injury, disease or ageing. These researchers evaluated the current evidence in the literature on micro-needling. They carried out a systematic literature review by searching the electronic databases PubMed and Google Scholar. The reviewed articles were analyzed and compared on study design, treatment protocol, outcome parameters, efficacy measurement and results to evaluate the strength of the current evidence. Micro-needling was examined in experimental settings for its effects on atrophic acne scars, skin rejuvenation, hypertrophic scars, keloids, striae distensae, androgenetic alopecia, melasma and acne vulgaris. Several clinical trials used randomization and single-blinding to strengthen the validity of the study outcome. Micro-needling showed noteworthy results when used on its own and when combined with topical products or radiofrequency. When compared with other treatments, it showed similar results but was preferred due to minimal side effects and shorter downtime. The authors concluded that this systematic review positioned micro-needling as a safe and effective therapeutic option for the treatment of scars and wrinkles. These investigators stated that the current literature shows some methodological shortcomings, and further research is needed to truly establish micro-needling as an evidence-based therapeutic option for treating scars, wrinkles and other skin conditions.

Furthermore, an UpToDate review on “Striae distensae (stretch marks)” (MacGregor JL, Wesley) states that “Improvement in striae distensae using microneedling has been documented in small uncontrolled studies. Larger studies are needed to confirm efficacy and compare the efficacy of microneedling with
fractional laser resurfacing”.

**CPT Codes / HCPCS Codes / ICD-10 Codes**

Information in the [brackets] below has been added for clarification purposes. Codes requiring a 7th character are represented by "+":

<table>
<thead>
<tr>
<th>Code</th>
<th>Code Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dermabrasion:</td>
</tr>
<tr>
<td></td>
<td>CPT codes covered if selection criteria are met:</td>
</tr>
<tr>
<td>15780</td>
<td>Dermabrasion; total face</td>
</tr>
<tr>
<td>15781</td>
<td>segmental, face</td>
</tr>
<tr>
<td>15782</td>
<td>regional, other than face</td>
</tr>
<tr>
<td>15783</td>
<td>superficial, any site (e.g., tattoo removal)</td>
</tr>
<tr>
<td></td>
<td>ICD-10 codes covered if selection criteria are met:</td>
</tr>
<tr>
<td>C44.01, C44.111</td>
<td>Basal cell carcinoma</td>
</tr>
<tr>
<td>- C44.119</td>
<td></td>
</tr>
<tr>
<td>C44.211 -</td>
<td></td>
</tr>
<tr>
<td>C44.219,</td>
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<tr>
<td>C44.310 -</td>
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<tr>
<td>C44.319</td>
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</tr>
<tr>
<td>C44.41, C44.510</td>
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<tr>
<td>- C44.519</td>
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<tr>
<td>C44.611 -</td>
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<tr>
<td>C44.619,</td>
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<tr>
<td>C44.711 -</td>
<td></td>
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<tr>
<td>C44.719</td>
<td></td>
</tr>
<tr>
<td>C44.81, C44.91</td>
<td></td>
</tr>
<tr>
<td>L57.0</td>
<td>Actinic keratosis</td>
</tr>
<tr>
<td>L70.0 - L70.9</td>
<td>Acne</td>
</tr>
<tr>
<td>L80 - L81.9</td>
<td>Vitiligo and other disorders of the skin</td>
</tr>
<tr>
<td>L90.5</td>
<td>Scar conditions and fibrosis of skin [includes acne scarring]</td>
</tr>
<tr>
<td>L90.8 - L90.9</td>
<td>Other and unspecified atrophic disorders of skin [includes acne scarring]</td>
</tr>
<tr>
<td>L91.0</td>
<td>Hypertrophic scar</td>
</tr>
<tr>
<td>Code</td>
<td>Code Description</td>
</tr>
<tr>
<td>-------</td>
<td>----------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>L92.3</td>
<td>Foreign body granuloma of the skin and subcutaneous tissue [diffuse silicone granuloma]</td>
</tr>
</tbody>
</table>

Chemical peel, dermal and epidermal:

CPT codes covered if selection criteria are met:

- 15789  Chemical peel, facial; dermal
- 15793  Chemical peel, nonfacial; dermal

CPT codes not covered for indications listed in the CPB:

- 15788  Chemical peel, facial; epidermal
- 15792  Chemical peel, nonfacial; epidermal
- 17360  Chemical exfoliation for acne

ICD-10 codes covered if selection criteria are met:

- C44.01  Basal cell carcinoma
- C44.111 - C44.119
- C44.211 - C44.219
- C44.310 - C44.319
- C44.41
- C44.510 - C44.519
- C44.611 - C44.619
- C44.711 - C44.719
- C44.81
- C44.91
- L57.0  Actinic keratosis

ICD-10 codes not covered for indications listed in the CPB (not all-inclusive):

- D23.0 - D23.9  Other benign neoplasm of skin
- L70.0 - L70.9  Acne
- L81.0 - L81.9  Other disorders of pigmentation
- L90.5  Scar conditions and fibrosis of skin
<table>
<thead>
<tr>
<th>Code</th>
<th>Code Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>L90.8, L90.9, L91.8</td>
<td>Other atrophic and hypertrophic disorders of skin [skin wrinkling] [includes acne scarring]</td>
</tr>
</tbody>
</table>

**Acne surgery:**

CPT codes covered if selection criteria are met:

- Punch debridement, unroofing and/or excision (Stage III or IV):
  - No specific code
  - **10040** Acne surgery (e.g., marsupialization, opening or removal of multiple milia, comedones, cysts, pustules)

**ICD-10 codes covered if selection criteria are met:**

- L70.0 - L70.1 Other acne
- L70.2 Acne varioliformis
- L71.0 - L71.9 Rosacea [acute]
- L72.11 - L72.12 Pilar and trichodermal cyst [due to acne]

**Cryoslush therapy:**

CPT codes not covered for indications listed in the CPB:

- **17340** Cryotherapy (CO\textsubscript{2}, slush, liquid N\textsubscript{2}) for acne

**Other CPT codes related to the CPB:**

- **17000 - 17250** Destruction, benign or premalignant lesions
- **17260 - 17286** Destruction, malignant lesions, any method

**ICD-10 codes not covered for indications listed in the CPB:**

- L70.0 - L70.1 Other acne
- L70.2 Acne varioliformis
- L71.0 - L71.9 Rosacea
- L72.11 - L72.12 Pilar and trichodermal cyst

**Intralesional Injection of Steroid:**

CPT codes covered for indications listed in the CPB:

- **11900** Injection, intralesional; up to and including 7 lesions
- **11901** Injection, intralesional; more than 7 lesions

HCPCS codes covered if selection criteria are met:

- **J3301** Injection, triamcinolone acetonide, not otherwise specified, 10 mg

**ICD-10 codes covered for indications listed in the CPB:**
The above policy is based on the following references:

**Dermabrasion**


05/31/2019


http://www.aetna.com/cpb/medical/data/200_299/0251.html 05/31/2019


34. Waldman A, Bolotin D, Arndt KA, et al. ASDS Guidelines Task Force: Consensus recommendations regarding the safety of lasers, dermabrasion,

Chemical Peel

14. Witheiler DD, Lawrence N, Cox SE, et al. Long-term efficacy and safety of Jessner's solution and 35% trichloroacetic acid vs 5% fluorouracil in the


http://www.aetna.com/cpb/medical/data/200_299/0251.html 05/31/2019


Acne Surgery, Liquid Nitrogen, Cryoslush and Fractional Radiofrequency


Micro-Needling for Acne Scars and Other Dermatological Indications


AETNA BETTER HEALTH® OF PENNSYLVANIA

Amendment to
Aetna Clinical Policy Bulletin Number: 0251 Dermabrasion,
Chemical Peels, and Acne Surgery

There are no amendments for Medicaid.